HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Baltimore, Maryland

MEMORANDUM FOR: Gen. Power

Col Ritland called asking that I obtain your approval for the supply to the 'project of

100 Octane
JP-4
Oil

in small amounts from Kirtland. Monty Canterbury stated it would be no problem if you concurred.

I gave Ritland interim approval pending direct word from you.

DON FLICKINGER
Brigadier General, USAF (SC[redacted]
Director of Research

HEADQUARTERS
AIR RESEARCH AND DEVELOPMENT COMMAND
Baltimore, Maryland

DATE

MEMORANDUM FOR: Gen Flickinger

04

[redacted]
Lieutenant Colonel, USAF
Commanding

Confidential

June 24, 1955

cc. - Col. O. R. Hand

Dear Kelly.

Some of our Engineering boys are asking me whether or not it is a feasible and practical thing to consider investigation and test of a burner and nozzle combination for the J57 engine designed specifically for primary use at high altitudes. The basic thought is one in which instead of having to make a burner and nozzle combination that will operate satisfactorily at fuel flows from as high as to 15,000-16,000 lb. per hour down to 400 lb. per hour that perhaps a better job could be done by concentrating on a combination designed specifically for 6000 lb. per hour or less fuel flow. Such a special combination would be in the direction of improved thrust, reduced fuel consumption, added surge margin and improved burner and engine life. The exact degree in each instance has not been evaluated quantatively but the question at the moment is whether or not it is feasible to consider spending manpower and laboratory facilities recognizing that all of these characteristics would be in the right direction but that the engine thrust at low altitudes would be limited by a maximum fuel flow on the order of 6000 lb. per hour. As you will note by checking the specification, this would mean that under sea level standard condition take-off thrust would be limited to approximately 75% of present military rated power, by 15,000 ft. full normal rated power would be available up to 500 knots and by 25,000 ft. + ACCEL full military rated power would be available up to 600 knots.

I would like the benefit of your thoughts on this proposal as to whether or not, from an airplane operating standpoint, it is a feasible thing to consider. Obviously this is not something for immediate application but is merely being considered for laboratory investigation at this time.

Very truly yours,

By SJLL-3

WORTH INVESTIGATING

[redacted]

LOG-SIGNED FOR. [redacted]

[redacted] 5 July 1955.